THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte RONALD S. BLOUGH, JERARD B. HOAGE
and LARRY A. MESSER

_____

Appeal No. 95-4025
Application 07/996,968[1]

_____

HEARD: February 12, 1999

_____

Before KIMLIN, OWENS and SPIEGEL, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's refusal to allow

---

[1] Application for patent filed December 23, 1992. According to the appellants, the application is a continuation-in-part of Application 07/969,001, filed October 30, 1992; which is a division of Application 07/687,373, filed April 18, 1991, now Patent 5,194,144, issued March 16, 1993.

appellants' claims 1 and 4-6 as amended after final rejection. These are the only claims remaining in the application.

THE INVENTION

Appellants' claimed invention is directed toward a method for simultaneously aerating and agitating sludge wherein air bubbles having an average size of about 0.25 mm are dispersed into the sludge as the sludge is agitated. Claim 1 is illustrative and reads as follows:

1. A method of simultaneous aeration and agitation of sludge, said method comprising;

moving atmospheric pressure air through a confined elongated zone into a larger zone of reduced air pressure which contains sludge;

dispersing extremely small reduced pressure microbubbles of an average size of about 0.25mm into the sludge while simultaneously agitating said sludge; and

maintaining the dispersed microbubbles in said sludge to increase lateral oxygen transfer to replace oxygen used by aerobic bacteria.

THE REFERENCE

Blough 3,810,548 May 14, 1974

THE REJECTION

Claims 1 and 4-6 stand rejected under 35 U.S.C. § 103 as being unpatentable over Blough.[2]

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. This rejection therefore is not sustained.

Blough discloses a floating apparatus for aerating and circulating animal waste material, including a rotatable hollow shaft which extends downwardly into the material and an axial thrust propeller rigidly attached to the lower end of the shaft (abstract). Rotation of the shaft and propeller causes air to be drawn downwardly out of the lower end of the shaft and formed into small bubbles which are propelled downwardly into the material (*see id*.).

As pointed out by the examiner (answer, page 4), Blough discloses that small bubbles are desirable. Blough teaches (col. 1, lines 52-57) that "the smaller the bubbles, the

[2] The rejection of claims 1, 5 and 6 under 35 U.S.C. § 102(b) has been withdrawn (examiner's answer, page 3).

greater the ratio of bubble surface area to volume. This enables the oxygen to be more easily dissolved in the material, which is the intended result." Blough also teaches that smaller bubbles rise to the surface more slowly than larger bubbles (col. 4, lines 36-40). Blough discloses that his apparatus produces bubbles having a diameter of approximately 1 mm, which is four times that recited in appellants' claim 1.

The examiner argues that it would be possible to modify the Blough process to produce a bubble size within the range required by appellants' claims (answer, page 4).

In order for a *prima facie* case of obviousness of appellants' claimed method to be established, the prior art must be such that it would have provided one of ordinary skill in the art with both a suggestion to carry out appellants' claimed process and a reasonable expectation of success in doing so. *See In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). "Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *Id*. The mere possibility

that the prior art could be modified such that appellants' process is carried out is not a sufficient basis for a *prima facie* case of obviousness. *See In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *In re Ochiai*, 71 F.3d 1565, 1570, 37 USPQ2d 1127, 1131 (Fed. Cir. 1995).

One of ordinary skill in the art clearly would have been motivated to modify the structure or use of the Blough apparatus to form bubbles smaller than 1 mm in view of the teaching by Blough discussed above of the benefits of decreasing the bubble size. The examiner's argument is deficient in that he has provided no evidence that one of ordinary skill in the art, given the Blough disclosure, would have had a reasonable expectation of success in forming bubbles having an average size of about 0.25 mm as required by appellants' claims. Blough teaches that the rapid rotation of his propeller produces a region of reduced pressure immediately behind the propeller and causes the air to be sucked downwardly through the hollow shaft to which the propeller is attached and into the animal waste material (col. 4, lines 23-28). The rapidly rotating axial thrust propeller,

Blough teaches, breaks the air into small bubbles (col. 4, lines 18-32). Appellants disclose forming their small bubbles by using a propeller to pull air through a small orifice, located upstream of the propeller, into a reduced pressure region which results from the formation of a water vortex by the propeller (specification, pages 11 and 12). Blough does not disclose use of such an orifice. The examiner has not explained, and it is not apparent from the evidence of record, why one of ordinary skill in the art would have had a sufficient knowledge of how to modify Blough's apparatus, by use of an orifice or any other technique, or how to modify the method of using the apparatus, such that the person would have had a reasonable expectation of success of producing bubbles having an average size of 0.25 mm.

For the above reasons, we find that the examiner has not set forth a factual basis which is sufficient to support a conclusion of obviousness of the invention recited in any of appellants' claims.

Since no *prima facie* case of obviousness has been

established, we need not address the Hoage declaration. *See In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); *In re Rinehart*, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

DECISION

The rejection of claims 1 and 4-6 under 35 U.S.C. § 103 over Blough is reversed.

REVERSED

EDWARD C. KIMLIN Administrative Patent Judge	)	
TERRY J. OWENS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
CAROL A. SPIEGEL Administrative Patent Judge	)	

Appeal No. 95-4025
Application 07/996,968

TJO/caw

Zarley, McKee, Thomte, Voorhees & Sease
801 Grand
Suite 3200
Des Moines, IA 50309